REMARKS

In response to the Office Action mailed November 6, 2006, Applicant has amended the application as above. No new matter is added by the amendments as discussed below. Applicant respectfully requests the entry of the amendments and reconsideration of the application in view of the amendments and remarks set forth below.

Discussion of Claim Amendments

Claims 1, 4 and 5 have been amended. Claims 7-10 have been added. Upon entry of the amendments, Claims 1, 3, 4, 5 and 7-10 are pending in this application. New Claim 7 is supported for example, by the specification in Paragraph 51, "as shown in Fig. 2B, the formation angle A of the top surface of the threaded section 10 with respect to the horizontal face (the face parallel to the top plate 2) should be from 20° to 45°." New Claim 8 is supported for example, by the specification in Paragraph 32, "the protruding length of the inner seal projection 12 should be from 1 mm to 5 mm." New Claim 9 is supported for example, by the specification in Paragraph 82, "and a skirt-like expanding cylindrical section 33b, which widens in diameter downwards from the bottom edge of the erect cylindrical section 33a." New Claim 10 is supported for example, by the specification in Paragraph 81, "the diameter of the inner seal projection 32 gradually increases in the protruding direction (downward)." Thus, the amendments to the claims do not introduce any new matter. Entry of the amendments is respectfully requested.

Discussion of Rejection of Claims under 35 U.S.C. § 103(a)

Claims 1 and 3-6 were rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,257,705, to De Santana to U.S. Patent No. 6,325,226 to Krautkramer and the

knowledge of one of ordinary skill in the art. Furthermore, Claims 1 and 3-6 were rejected under 35 U.S.C. § 103(a) being obvious over European Publication No. 644,125 to Perchepied to Krautkramer and the knowledge of one of ordinary skill in the art. Applicant respectfully submits that pending Claims 1 and 3-6 are allowable over the cited references as discussed below. To establish a prima facie case of obviousness a three-prong test must be met. First, there must be some suggestion or motivation, either in the references or in the knowledge generally available among those of ordinary skill in the art, to modify the reference. Second, there must be a reasonable expectation of success found in the prior art. Third, the prior art reference must teach or suggest all the claim limitations. In re Vaeck, 947 F.2d 488 (Fed. Cir. 1991). Applicant respectfully submits that the introduced prior art fails to teach or suggest at least one limitation found in each of the above listed claims of the application.

The cap of one embodiment is formed integrally, Claims 1, 4 and 5, including a seal portion from one material, also known as a "one-piece cap." The one-piece cap is made from softer material in order to obtain tightness of the seal portion than a "two-piece cap" which is formed from a seal member made from soft material and a cap made from hard and rigid material. Accordingly, the one-piece cap deforms more easily than the two-piece cap; therefore, certain design elements must be incorporated into a one piece cap design. The height of the screw thread of the one-piece cap should be larger than that of a two-piece cap in order to prevent a detachment of the cap by deforming.

However, the larger the height of the screw thread, the greater the strength differences are between where there is a screw thread and where there is no screw thread present. As a result, the screw thread will be deformed (broken) when the cap is force drawn from a mold if design criteria are not included to avoid this problem. The result of this deformation allows that the

contents will be leaked or the cap will be detached when the cap is tightened to the container. Additionally, if attachment occurs the cap can detach or leak due to internal pressure of the system.

The design of the thread shape in one embodiment can solve the problem of biased deforming of the one-piece cap, which tends to have this problem. Thereby, the strength of the threaded portion becomes uniform along the circumference. Furthermore, in view of this, the deformation of the cap during manufacture can be prevented. In addition, since the fitting state is uniform along the circumference, good sealing performance can be obtained. As is recited in Claim 1, the one-piece cap of one embodiment has a screw thread with substantially two coils, being that the threaded section is formed from 680° to 720° (approximately twice the circumference), similar limitations exist in Claims 4 and 5. Further, Claim 1 recites the divided threaded sections each have substantially an equal formation angle, similar limitations exist in Claims 4 and 5. The threaded section can be viewed as two separate threaded sections; an uppermost divided threaded section and a lowermost divided threaded section, Fig. 1 sections 15a and 15b, which are adjacent in the circumferential direction. The cap includes an intermediate divided section, Fig. 1 connecting section 16, between the uppermost divided section 15a and the lowermost divided threaded section 15b in the axial direction; this section can be viewed to allow continuous divided threaded sections. Further, as is recited in claim 1, the circumferential formation angle of the connecting section is substantially the same as that of the dividing section, similar limitations exist in Claims 4 and 5. That is to say, the circumferential formation angle of the connected threaded section is the same as the total circumferential formation angle of two divided threaded sections and one connecting section. Therefore, in view of the foregoing recited structural limitations, the one-piece cap of one embodiment has uniform

strength and this is a characteristic not found in the cited references and cannot be achieved from the cited references. Further, the lowermost divided threaded section is reinforced by providing a connecting section 16 instead of a dividing section between the uppermost divided threaded section and the lowermost divided threaded section, and the cap is resistant to deformation by the internal pressure of the container.

Applicant respectfully submits that at least these limitations are not taught or suggested by the cited prior art. De Santana (US-5,257,705) discloses, Fig. 4, a connecting threaded section 16 connecting an uppermost and a lowermost divided threaded section. De Santana does not claim that the divided threaded sections are from 680° to 720° as is claimed in one embodiment of Claim 1. Further, by looking at De Santana Fig. 4 it does not show that the divided threaded section is from 680° to 720° which is the circumferential angle range in Claims 1, 4, and 5. It can be seen in De Santana that the circumferential formation angle of the connected threaded section is larger than that of the total of two divided threaded sections and one connecting section of the current embodiment. This is in contrast to Claims 1, 4, and 5 as stated above where the circumferential formation angle of the connecting section is substantially the same as that of the dividing section. De Santana teaches the thread section is divided at substantially regular intervals by "intervals 16." However, the intervals 16 are provided for decompression of the container by releasing gas. There is no teaching or suggestion of forming the cap so as to have uniform strength in De Santana. Having a long connecting thread, as is taught in De Santana, imparts a structural weakness at this segment in the cap and can be easily deformed during manufacture. The large connecting section recited in De Santana causes the divided threaded sections to have a gap; therefore the sections are not evenly spaced around the entire circumference of the cap. In contrast, Claim 1 recites: "dividing sections are provided around an

entire circumference of the threaded section at substantially equal intervals selected from 45° to 90°." Additionally, in one embodiment of Claim 4 "the dividing sections are provided around an entire circumference of the threaded section at substantially equal intervals selected from 45° to 90° in the circumferential direction." Finally, in one embodiment of Claim 5 "the dividing sections are provided around an entire circumference of the threaded section at substantially equal intervals selected from 45° to 90° in the circumferential direction." De Santana does not disclose or suggest the reason for the connected threaded section being long. The current embodiment where the divided sections are evenly spaced around the whole circumferential angle, 680° to 720°, overcomes the type of structural weakness as seen in De Santana. In addition, since the intervals 16 are provided for decompression, it is unnecessary for the intervals to be formed at regular intervals. This is in contrast to what is recited in Claim 1 where the intervals are regular. The primary design considerations in De Santana relate to providing a flask cap that is tamper resistant; if the cap is tampered with it would be obvious to the user so as to encourage the user to avoid using the containers contents. In De Santana there is no mention of an inner seal projection or the dimensions thereof. Further, Applicant respectfully submits Krautkramer does not teach two divided threaded sections as two separate threaded sections; an uppermost divided threaded section and a lowermost divided threaded section; connected by a connecting section which the threaded section is formed from 680° to 720°, as is recited in Claims 1, 4, and 5. In view of that both De Santana and Krautkramer do not include at least one of the features of Claims 1, 4, and 5 as discussed above; the product of De Santana in view of Krautkramer would not result in a cap retaining at least one of the features of one embodiment.

Further, Applicant respectfully submits that the combination of Perchepied (EP-644,125) in view of Krautkramer also fails to teach the foregoing limitations. Perchepied discloses in Fig.

2 a thread section "8" which is formed by connecting divided threaded sections between the uppermost divided threaded section and the lowermost divided threaded section. However, Perchepied does not show whether the uppermost and lowermost threaded sections are evenly divided around the entire periphery. Moreover, it cannot be judged whether the thread is divided around the entire periphery or simply above and below the thread "8." If the thread is intended to be divided at regular intervals, it is natural to divide at the length of the portion referenced as "8" when referring to Perchepied. Therefore, the thread would not be divided along the length of the thread end portion in Fig. 2. Perchepied Fig. 1 suggests further divided threaded sections but it does not appear that these sections are evenly spaced. Further, it cannot be seen from Fig. 1 or Fig. 2 of Perchepied that the surmised intervals are selected from 45° to 90° in the circumferential direction as is shown in Claims 1, 4, and 5 of one embodiment. The interval length of 45° to 90° is advantageous because it lends to the strength and manufacturing advantage of the current disclosure. Perchepied has no disclosure or suggestion of forming the cap so as to have uniform strength. Additionally, Claim 7, "The synthetic resin cap according to claim 1, wherein a formation angle of a top surface of the threaded section with respect to the top plate is from 20° to 45°" is not obvious from Fig. 1 or Fig. 2 of Perchepied.

Further, Krautkramer fails to teach or suggest the foregoing limitation. Krautkramer discloses a cap having small intervals between the top divided threaded section and the bottom divided threaded section along the circumferential direction. However, there is no disclosure or suggestion in Krautkramer of a thread in which divided threaded sections below the uppermost divided threaded section and above the lowermost divided threaded section are connected.

The structure of one embodiment, especially the circumferential formation angles being substantially the same at the connecting section, which connects the uppermost divided threaded

section with the lowermost divided threaded section and at the dividing section, is not disclosed or suggested in Krautkramer or Perchepied. Namely, the structure of the current embodiment cannot be realized by combining these references to obtain the cap of one embodiment.

Accordingly, Applicant again reasserts its position that the PTO has failed to show that an objective teaching in the prior art or knowledge generally held by one of ordinary skill in the art would lead an individual to construct the claimed invention to solve the problem identified by Applicant, which is necessary to establish obviousness. In re Fine, 837 F.2d 1071, 1074 (Fed. Cir. 1988). Thus, Applicant submits that Perchepied in view of Krautkramer neither anticipates, nor would have made obvious the claims as presently presented herein.

CONCLUSION

In view of Applicant's foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 3/5/2007

By: _____

Eric M. Nelson
Registration No. 43,829
Attorney of Record
Customer No. 20,995
(619) 235-8550

3489461
030207